

Linzer biol. Beitr.	50/1	89-109	27.7.2018
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## Six new species of *Trichoglossina* from China (Coleoptera: Staphylinidae: Aleocharinae: Oxypodini)

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**A b s t r a c t :** Six species of *Trichoglossina* PACE, 1987 from China are described and illustrated: *Trichoglossina aptera* nov.sp. (North Sichuan), *T. alticola* nov.sp. (North Sichuan), *T. acutissima* nov.sp. (North Sichuan), *T. volans* nov.sp. (North Sichuan), *T. discolor* nov.sp. (Shaanxi), and *T. bifida* (Northeast Yunnan). The distributions of these species are mapped. The genus, which has been recorded only from Nepal and China, now includes 39 species.

**K e y w o r d s :** Coleoptera, Staphylinidae, Aleocharinae, Oxypodini, *Trichoglossina*, China, Sichuan, Shaanxi, Yunnan, taxonomy, new species, distribution map.

### Introduction

The oxypodine genus *Trichoglossina* PACE, 1987 previously included 33 species, 14 from Nepal and 19 from China. The Chinese representatives were all described by PACE (1999, 2012) and have been recorded from Sichuan (11 species), Yunnan (4), Shaanxi (3), Gansu (2), Hubei (1), and Guangxi (1). Twelve of these species are currently known only from their respective type localities

According to the original description of *Trichoglossa* PACE, 1984, a preoccupied name subsequently replaced with *Trichoglossina* by PACE (1987), the genus is characterized particularly by a short and apically undivided ligula with four minute setae. However, based on the species studied in the present paper, *Trichoglossina* is distinguished by additional characters, partly evidently synapomorphies, such as a derived chaetotaxy of the female sternite VIII, characteristic and sexually dimorphic shapes of tergite and sternite VIII, an aedeagus with a prominent crista apicalis and a long flagellum in the internal sac, a spermatheca with a deep and mostly narrow cuticular invagination, an abdomen with remarkably dense and distinct punctation and with shallow anterior impressions on tergites III-V, and slender legs with long tarsi (as long as the tibiae or nearly so) and an elongate metatarsomere I (as long as the combined length of metatarsomere II-IV or nearly so). While the spermatheca is of little use for taxonomic purposes (little interspecific combined with remarkable intraspecific variation), the shapes of tergite and sternite VIII, as well as the morphology of the median lobe of the aedeagus are distinctive. Unfortunately, PACE (1984, 1987, 1999, 2012) never illustrated the male and female tergites and sternites VIII. Moreover, he described several species based exclusively on females, thus rendering an interpretation of these species difficult.

During two field trips to China conducted by Michael Schülke, David Wrase (both Berlin), and the author in summer 2012 and by Michael Schülke and the author in sum-

mer 2014, seven species of *Trichoglossina* were collected in high-altitude habitats in North Sichuan, Shaanxi, and East Yunnan. One species is represented only by a single female and consequently remains unnamed. A comparison of the remaining six species with the descriptions and illustrations provided by PACE (1999, 2012) revealed that they were undescribed.

## Material and methods

The material treated in this study is deposited in the following collections:

MNB ..... Museum für Naturkunde, Berlin (coll. M. Schülke)

cAss.....author's private collection

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss), a Discovery V12 microscope (Zeiss), and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using a digital camera (Nikon Coolpix 995), Axiocam ERc 5s, and Picolay software. The map was created using MapCreator 2.0 (primap) software.

Body length was measured from the anterior margin of the labrum to the abdominal apex, the length of the forebody from the anterior margin of the labrum to the posterior margin of the elytra, head length from the anterior margin of the clypeus (without anteclypeus) to the posterior constriction of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

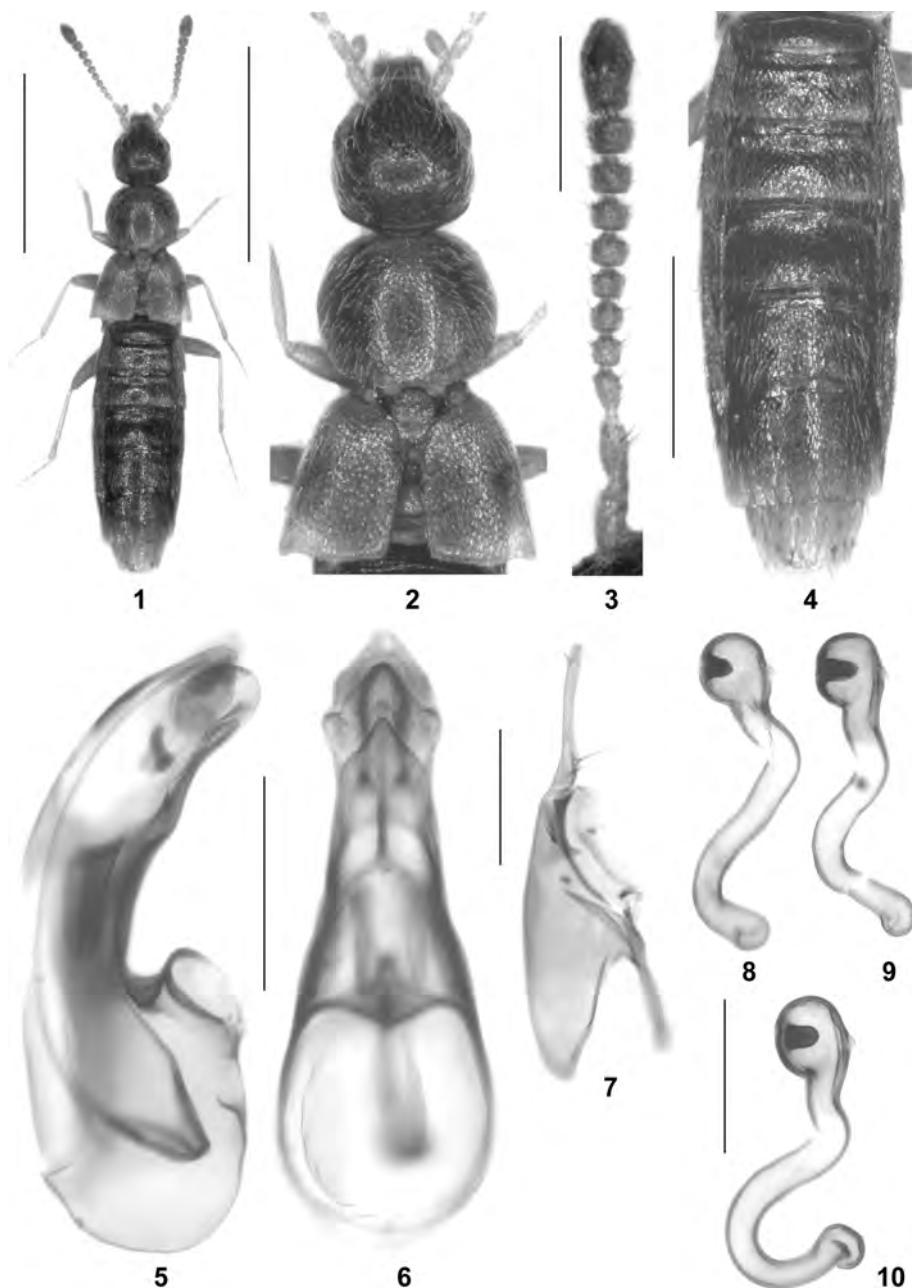
## Results

### *Trichoglossina aptera* nov.sp. (Figs 1-10, 19-22, 26-27, Map 1)

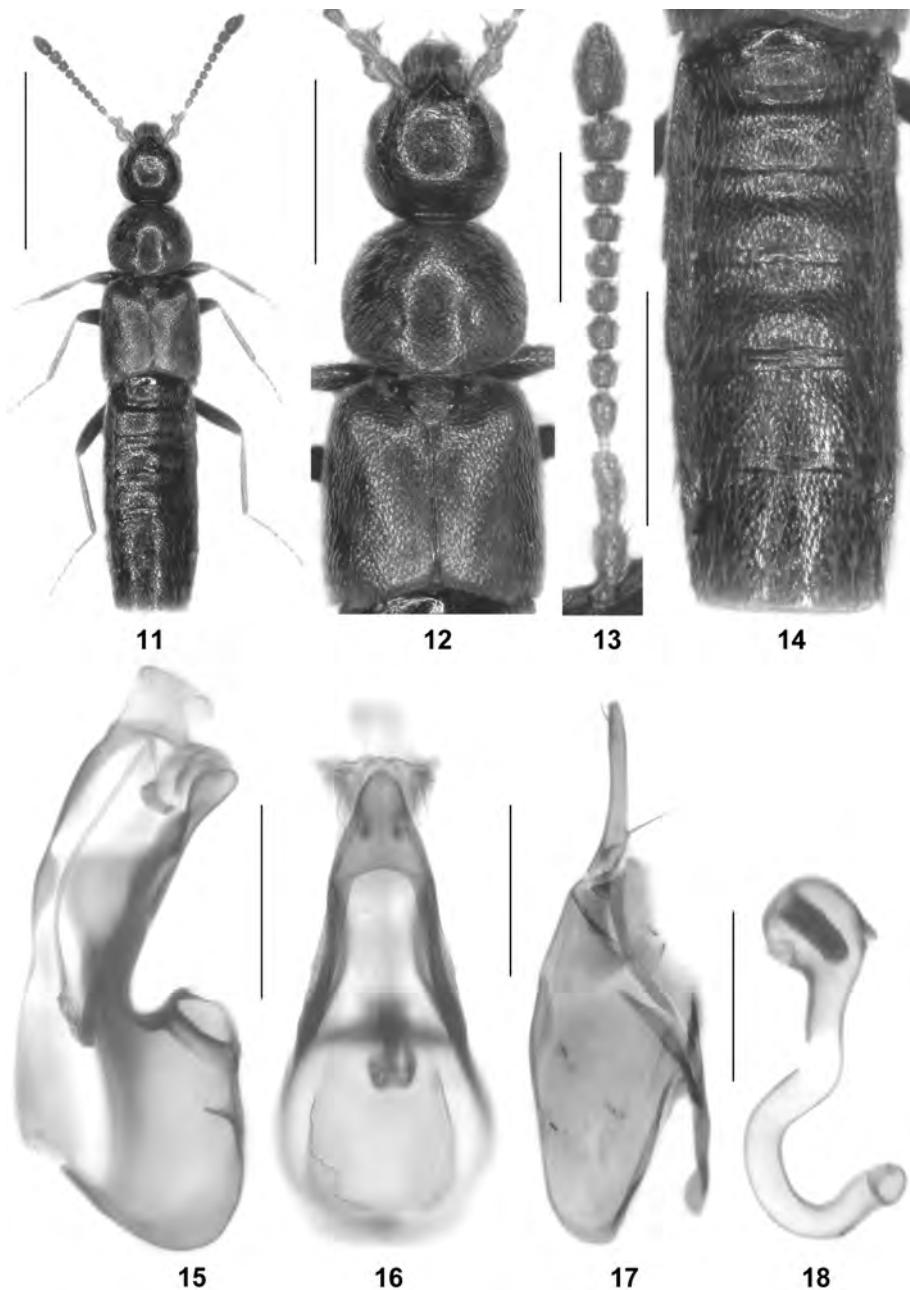
**T y p e m a t e r i a l :** Holotype ♂: "CHINA [19] - N-Sichuan, N Songpan, 33°03'15"N, 103°43'36"E, 3390 m, spruce forest, sifted, 9.VIII.2012, V. Assing / Holotypus ♂ *Trichoglossina aptera* sp.n., det. V. Assing 2018" (cAss). **Paratypes:** 4♂♂, 8♀♀: same data as holotype (cAss); 14 exs.: same data, but leg. Schülke (MNB, cAss); 1♂: "CHINA [22] - N-Sichuan, pass ENE Songpan, 4080 m, 32°44'54"N, 103°43'43"E, sifted, 10.VIII.2012, V. Assing" (cAss); 8 exs.: "CHINA: N-Sichuan [CH12-21], 49 km N Songpan, road S 301 km 114, N Gonggaling pass, 33°04'31"N, 103°42'38"E, 3230 m, spruce forest, litter, moss & mushrooms sifted, 9.VIII.2012, leg. M. Schülke" (MNB, cAss).

**E t y m o l o g y :** The specific epithet (adjective) alludes to the complete absence of hind wings.

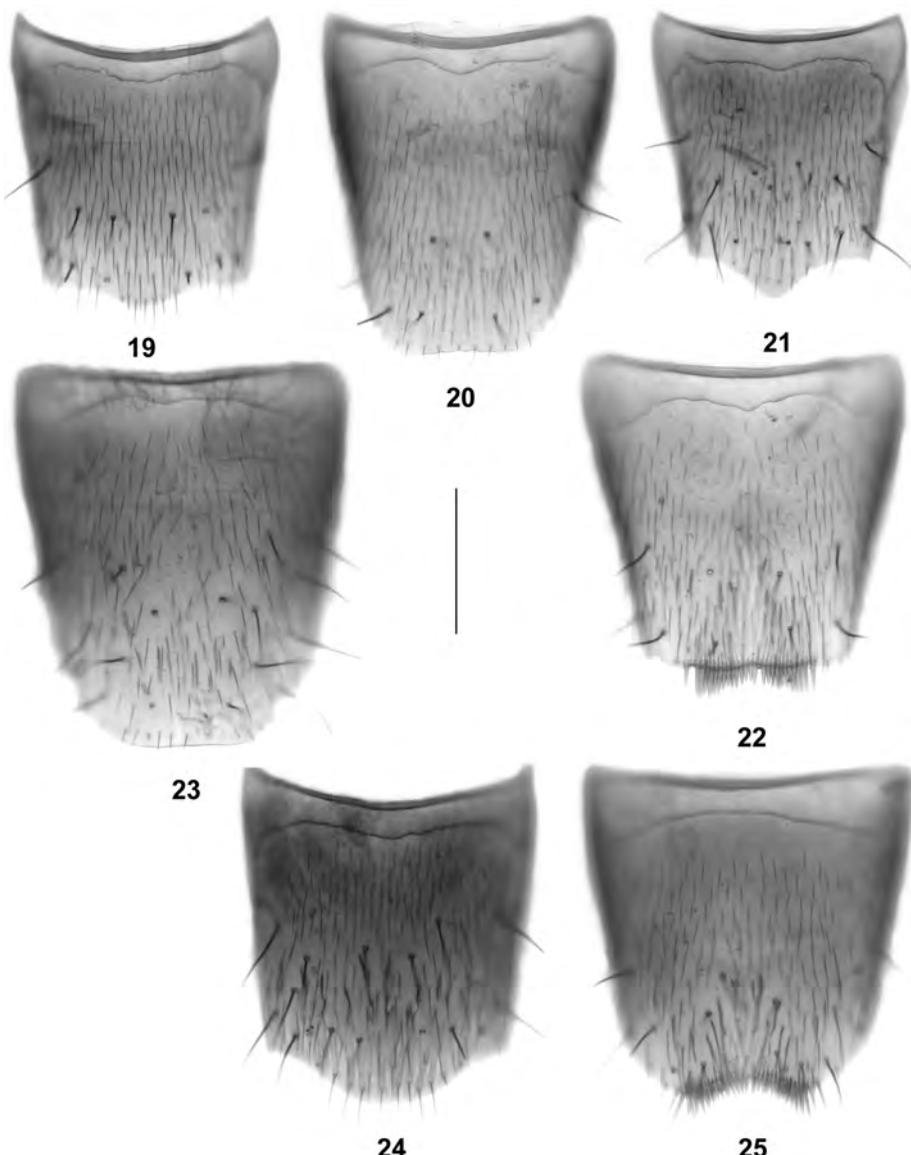
**D e s c r i p t i o n :** Body length 2.4-2.9 mm; length of forebody 1.1-1.3 mm. Habitus as in Fig. 1. Coloration: head blackish; pronotum dark-brown; elytra pale-brown; abdomen blackish with the posterior portions of tergites VII and VIII reddish; legs yellowish; antennae brown to dark-brown with the basal 3-5 antennomeres yellowish; maxillary palpi yellowish to yellowish-brown.



**Figs 1-10:** *Trichoglossina aptera*: habitus (1); forebody (2); antenna (3); abdomen (4); median lobe of aedeagus in lateral and in ventral view (5-6); paramere (7); spermatheca (8-10). Scale bars: 1: 1.0 mm; 2, 4: 0.5 mm; 3, 5-7: 0.2 mm; 8-10: 0.1 mm.



**Figs 11-18:** *Trichoglossina alticola*: habitus (11); forebody (12); antenna (13); abdomen (14); median lobe of aedeagus in lateral and in ventral view (15-16); paramere (17); spermatheca (18). Scale bars: 11: 1.0 mm; 12, 14: 0.5 mm; 13, 15-17: 0.2 mm; 18: 0.1 mm.



**Figs 19-25:** *Trichoglossina aptera* (19-22) and *T. alticola* (23-25): male tergite VIII (19); male sternite VIII (20, 23); female tergite VIII (21, 24); female sternite VIII (22, 25). Scale bar: 0.2 mm.

Head (Fig. 2) approximately as broad as long or weakly oblong; punctuation dense and fine; interstices with pronounced microsculpture. Eyes weakly convex, approximately as long as postocular region or slightly shorter. Antenna (Fig. 3) approximately 0.75 mm long; antennomere IV weakly transverse; antennomeres V-X approximately 1.5 times as broad as long and gradually increasing in width, XI oblong, nearly as long as the combined length of antennomeres VIII-X.

Pronotum (Fig. 2) 1.15-1.20 times as broad as long and approximately 1.2 times as broad as head, broadest slightly anterior to middle; punctuation dense and fine, slightly more distinct than that of head; interstices with pronounced microreticulation.

Elytra (Fig. 2) short, approximately 0.7 times as long as pronotum; punctuation dense and fine, somewhat more distinct than that of pronotum; interstices with microsculpture. Hind wings completely reduced. Tarsi very long and slender; metatarsus nearly as long as metatibia; metatarsomere I nearly as long as the combined length of II-IV.

Abdomen (Fig. 4) approximately as broad as elytra; tergites III-V with shallow anterior impressions; punctuation fine and very dense, only slightly less dense on tergite VII than on anterior tergites; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII distinctly obtusely produced in the middle (Fig. 19); sternite VIII (Fig. 20) significantly longer than tergite VIII, posterior margin truncate; median lobe of aedeagus (Figs 5-6) approximately 0.5 mm long; ventral process narrow, somewhat sinuate, and apically acute in lateral view, apically very acute in ventral view; crista apicalis prominent; internal sac with long flagellum; paramere (Fig. 7) approximately 0.65 mm long, apical lobe long and slender, approximately half as long as basal portion of paramere.

♀: posterior margin of tergite VIII strongly angularly produced in the middle (Fig. 21); posterior margin of sternite VIII weakly convex, in the middle shallowly concave, with a conspicuous dense fringe of stout modified setae (Fig. 22); spermatheca as in Figs 8-10.

**C o m p a r a t i v e n o t e s :** *Trichoglossina aptera* is characterized by short elytra, completely reduced hind wings, by the shapes of the male and female tergite and sternite VIII, as well as by the shape of the median lobe of the aedeagus. According to the illustrations provided by PACE (1999, 2012), all previously described *Trichoglossina* species from China have longer elytra, suggesting that hind wings are present.

**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** The type material was collected in three localities near Songpan in North Sichuan, China (Map 1). The distribution is probably restricted, as can be inferred from the reduced hind wings. The specimens were sifted from litter and moss in a spruce forest with bushes and grassy clearings at 3390 m (Fig. 26), from litter and moss in a spruce forest at 3230 m, and from litter and moss in an alpine west slope with scree, grass, and shrubs at an altitude of nearly 4100 m (Fig. 27).

#### *Trichoglossina alticola* nov.sp. (Figs 11-18, 23-25, 27, Map 1)

**T y p e m a t e r i a l :** Holotype ♂: "CHINA [22] - N-Sichuan, pass ENE Songpan, 4080 m, 32°44'54"N, 103°43'43"E, sifted, 10.VIII.2012, V. Assing / Holotypus ♂ *Trichoglossina alticola* sp. n., det. V. Assing 2018" (cAss). Paratype ♀: same data as holotype (cAss).

**E t y m o l o g y :** The specific epithet (Latin, noun in apposition: inhabitant of high altitude) alludes to the elevation of the type locality.

**D e s c r i p t i o n :** Body length 3.0-3.2 mm; length of forebody 1.4-1.5 mm. Habitus as in Fig. 11. Coloration: body blackish with the elytra slightly paler (blackish-brown); legs with brown femora, pale-brown tibiae, and yellowish tarsi; antennae blackish-brown with the basal 2-3 antennomeres reddish; maxillary palpi dark-brown with the apical palpomere dark-yellowish.



Figs 26-27: Type localities of *Trichoglossina aptera* (above) and *T. alticola* (below).

Head (Fig. 12) approximately as broad as long or weakly oblong; punctuation dense and fine; interstices with microsculpture, but glossy. Eyes weakly convex, slightly shorter than postocular region. Antenna (Fig. 13) approximately 0.80-0.85 mm long; antennomere IV weakly transverse; antennomeres V-X transverse and gradually increasing in width, IX longer than VIII, X longer than IX, barely 1.5 times as broad as long, and XI approximately as long as the combined length of antennomeres IX and X.

Pronotum (Fig. 12) approximately 1.15 times as broad as long and nearly 1.3 times as broad as head, broadest in, or slightly anterior to, middle; punctuation and microsculpture similar to those of head.

Elytra (Fig. 12) approximately as long as pronotum; punctuation dense and fine, somewhat more distinct than that of pronotum; interstices with microsculpture. Hind wings fully developed. Tarsi very long and slender; metatarsus nearly as long as metatibia; metatarsomere I nearly as long as the combined length of II-IV.

Abdomen (Fig. 14) approximately as broad as elytra; tergites III-V with very shallow anterior impressions; punctuation fine and very dense, nearly as dense on tergite VII as on anterior tergites; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII weakly convex; sternite VIII (Fig. 23) significantly longer than tergite VIII, posterior margin truncate; median lobe of aedeagus (Figs 15-16) approximately 0.5 mm long; ventral process apically dilated in lateral view and moderately acute in ventral view; crista apicalis prominent; internal sac with long flagellum; paramere (Fig. 17) approximately 0.65 mm long, apical lobe long and slender, nearly half as long as basal portion of paramere.

♀: posterior margin of tergite VIII broadly convexly produced in the middle (Fig. 24); posterior margin of sternite VIII distinctly and broadly concave in the middle, with a conspicuous fringe of stout modified setae (Fig. 25); spermatheca as in Fig. 18.

**C o m p a r a t i v e n o t e s :** *Trichoglossina alticola* is characterized by the shapes of the male and female tergites and sternites VIII, as well as by the shape of the median lobe of the aedeagus. The general shape of the aedeagus is somewhat similar to that of *T. taibaiensis* PACE, 2012 from the Qinling Shan (Shaanxi), from which *T. alticola* is distinguished by distinctly darker coloration (particularly of the forebody) and by an apically more strongly dilated ventral process of the aedeagus in lateral view. For illustrations of the habitus and the primary sexual characters of *T. taibaiensis* see PACE (2012).

**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** The type locality is situated near Songpan in North Sichuan, China (Map 1). The specimens were sifted from litter and moss in an alpine west slope with scree, grass, and shrubs at an altitude of nearly 4100 m (Fig. 27). A specimen of *T. aptera* was found in the same locality.

#### ***Trichoglossina acutissima* nov.sp. (Figs 28-36, 47-50, Map 1)**

**T y p e m a t e r i a l :** Holotype ♂: "CHINA [26] - N-Sichuan, N Songpan, 33°15'26"N, 103°46'03"E, 2700 m, spruce forest with birch, 12.VIII.2012, V. Assing / Holotypus ♂ *Trichoglossina acutissima* sp.n., det. V. Assing 2018" (cAss). Paratypes: 8♂♂, 11♀♀: same data as holotype (cAss); 8 exs.: same data, but leg. Schülke (MNB, cAss).

**E t y m o l o g y :** The specific epithet is the superlative of the Latin adjective *acutus* and alludes to the acute apex of the ventral process of the aedeagus both in lateral and in ventral view.

**D e s c r i p t i o n :** Body length 2.8-3.5 mm; length of forebody 1.3-1.5 mm. Habitus as in Fig. 28. Coloration: head blackish; pronotum brown to blackish with the margins narrowly yellowish to reddish; elytra yellowish to yellowish-brown, mostly with a large lateral, weakly defined infuscate spot; abdomen blackish with the posterior margins of segments III-VI, the posterior portion of segment VII, and segments VIII-X dark-

yellowish to yellowish brown; legs with brown femora and yellowish to reddish tibiae and tarsi; antennae dark-brown with the basal 3-4 antennomeres reddish-yellow; maxillary palpi reddish-yellow with the terminal palpomere pale-yellowish.

Head (Fig. 29) approximately as broad as long or weakly oblong; punctuation dense and fine, visible only at high magnification; interstices with pronounced microreticulation. Eyes weakly convex, slightly shorter than postocular region. Antenna (Fig. 30) approximately 0.8 mm long; antennomere IV weakly transverse or as long as broad; antennomeres V-X transverse and gradually increasing in width, X only slightly longer than IX, approximately twice as broad as long, and XI large, nearly as long as the combined length of antennomeres VIII-X.

Pronotum (Fig. 29) 1.20-1.25 times as broad as long and 1.35-1.40 times as broad as head, broadest approximately in the middle, strongly convex in cross-section; punctuation and microsculpture similar to those of head.

Elytra (Fig. 29) approximately as long as pronotum or slightly shorter; punctuation very dense and fine, only slightly more distinct than that of pronotum; interstices with distinct microsculpture. Hind wings of reduced length, less than twice as long as elytra. Tarsi very long and slender; metatarsus nearly as long as metatibia; metatarsomere I approximately as long as the combined length of II-IV.

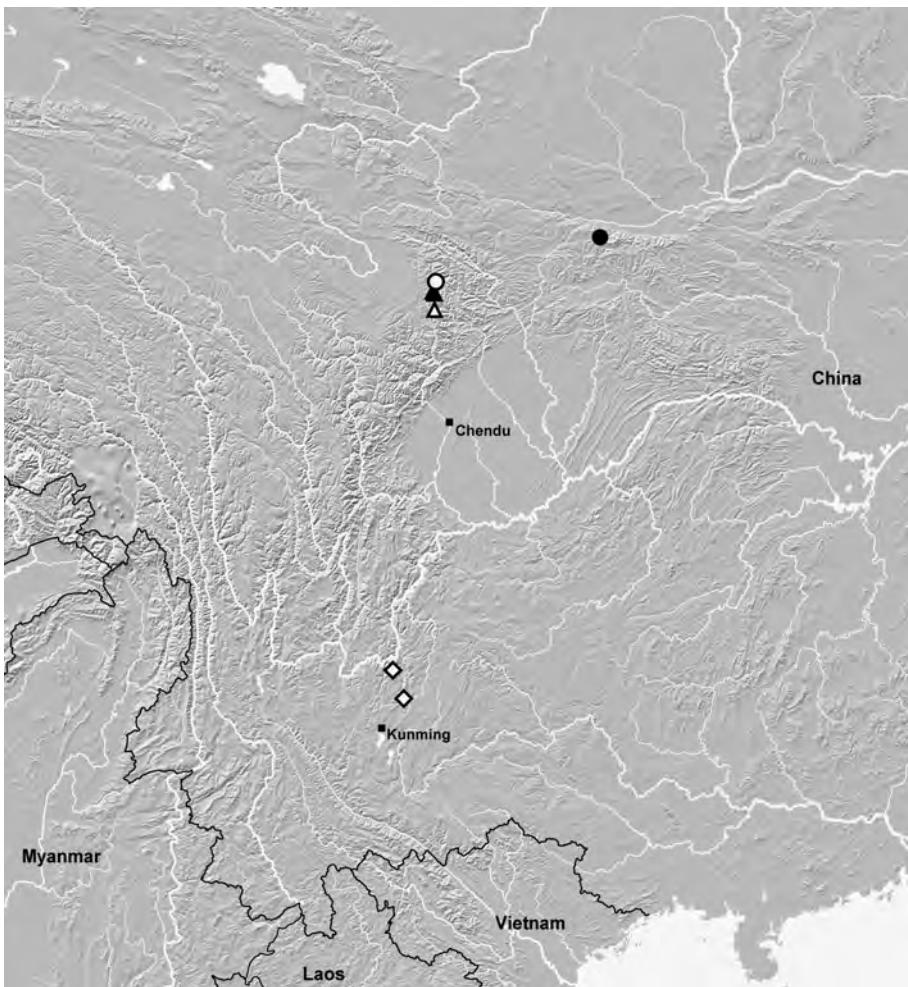
Abdomen (Fig. 31) slightly narrower than elytra; tergites III-V with very shallow anterior impressions; punctuation fine and very dense, nearly as dense on tergite VII as on anterior tergites; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII convexly produced in the middle (Fig. 47); sternite VIII (Fig. 48) significantly longer than tergite VIII, posterior margin truncate; median lobe of aedeagus (Figs 41-42) approximately 0.5 mm long; ventral process apically very acute both in lateral and in ventral view; crista apicalis prominent; internal sac with long flagellum; paramere (Fig. 34) approximately 0.75 mm long, apical lobe long, slender, and medially somewhat constricted, approximately half as long as basal portion of paramere.

♀: posterior margin of tergite VIII angularly produced in the middle (Fig. 49); posterior margin of sternite VIII convex, with a conspicuous fringe of stout modified setae (Fig. 50); spermatheca as in Figs 35-36.

**C o m p a r a t i v e n o t e s :** The shapes of the median lobe of the aedeagus and the spermatheca somewhat resemble those of *T. glaciei* PACE, 2012 from Gongga Shan and the environs of Kangding (Sichuan). The new species is distinguished from *T. glaciei* by the presence of distinct microsculpture on the head and pronotum (absent in *T. glaciei*), finer punctuation of the head and the pronotum, and an aedeagus with the ventral process apically much more acute and straight (sinuate in *T. glaciei*). For illustrations of the primary sexual characters of *T. glaciei* see PACE (2012).

**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** The type locality is situated to the north of Songpan in North Sichuan, China (Map 1). The specimens, two of them teneral, were sifted from litter and moss in a spruce forest with birch at an altitude of 2700 m.



**Map 1:** Distributions of *Trichoglossina aptera* (black and white triangles), *T. alticola* (white triangle), *T. acutissima* (white circle), *T. volans* (white circle), *T. discolor* (black circle), and *T. bifida* (white diamonds).

***Trichoglossina bifida* nov.sp. (Figs 37-46, 51-54, Map 1)**

**T y p e m a t e r i a l :** Holotype ♂: "CHINA [7] - Yunnan, mts W Dongchuan, 2620 m, 26°06'08"N, 102°54'46"E, pine for., 14.VIII.2014, V. Assing / Holotypus ♂ *Trichoglossina bifida* sp. n., det. V. Assing 2018" (cAss). Paratypes: 3♂♂, 7♀♀: same data as holotype (cAss); 16 exs.: same data, but leg. Schülke (MNB, cAss); 1♀: "CHINA [9b] - Yunnan, mt. W Xundian, 2300 m, mixed for., 25°34'58"N, 103°08'42"E, sifted, 16.VIII.2014, V. Assing" (cAss).

**E t y m o l o g y :** The specific epithet (adjective) alludes to the apically bifid ventral process of the aedeagus.

**D e s c r i p t i o n :** Body length 2.9-3.8 mm; length of forebody 1.4-1.6 mm. Habitus as in Fig. 37. Coloration: body blackish; legs with brown femora, reddish tibiae, and

yellowish tarsi; antennae reddish; maxillary palpi yellowish-red with the terminal antennomere pale-yellowish.

Head (Fig. 38) approximately as broad as long; punctuation dense and fine; interstices with shallow microreticulation. Eyes weakly convex, slightly shorter than postocular region. Antenna (Fig. 39) approximately 0.8 mm long; antennomere IV weakly transverse or as long as broad; antennomeres V-X transverse and gradually increasing in width, X longer than IX, barely 1.5 times as broad as long, and XI slightly longer than the combined length of antennomeres IX and X.

Pronotum (Fig. 38) 1.20-1.25 times as broad as long and 1.30-1.35 times as broad as head, broadest approximately in the middle, strongly convex in cross-section; punctuation and microsculpture similar to those of head.

Elytra (Fig. 38) approximately 0.9 times as long as pronotum; punctuation very dense and fine, but more distinct than that of pronotum; interstices without microsculpture. Hind wings present, but length not examined. Tarsi very long and slender; metatarsus approximately as long as metatibia; metatarsomere I approximately as long as the combined length of II-IV or nearly so.

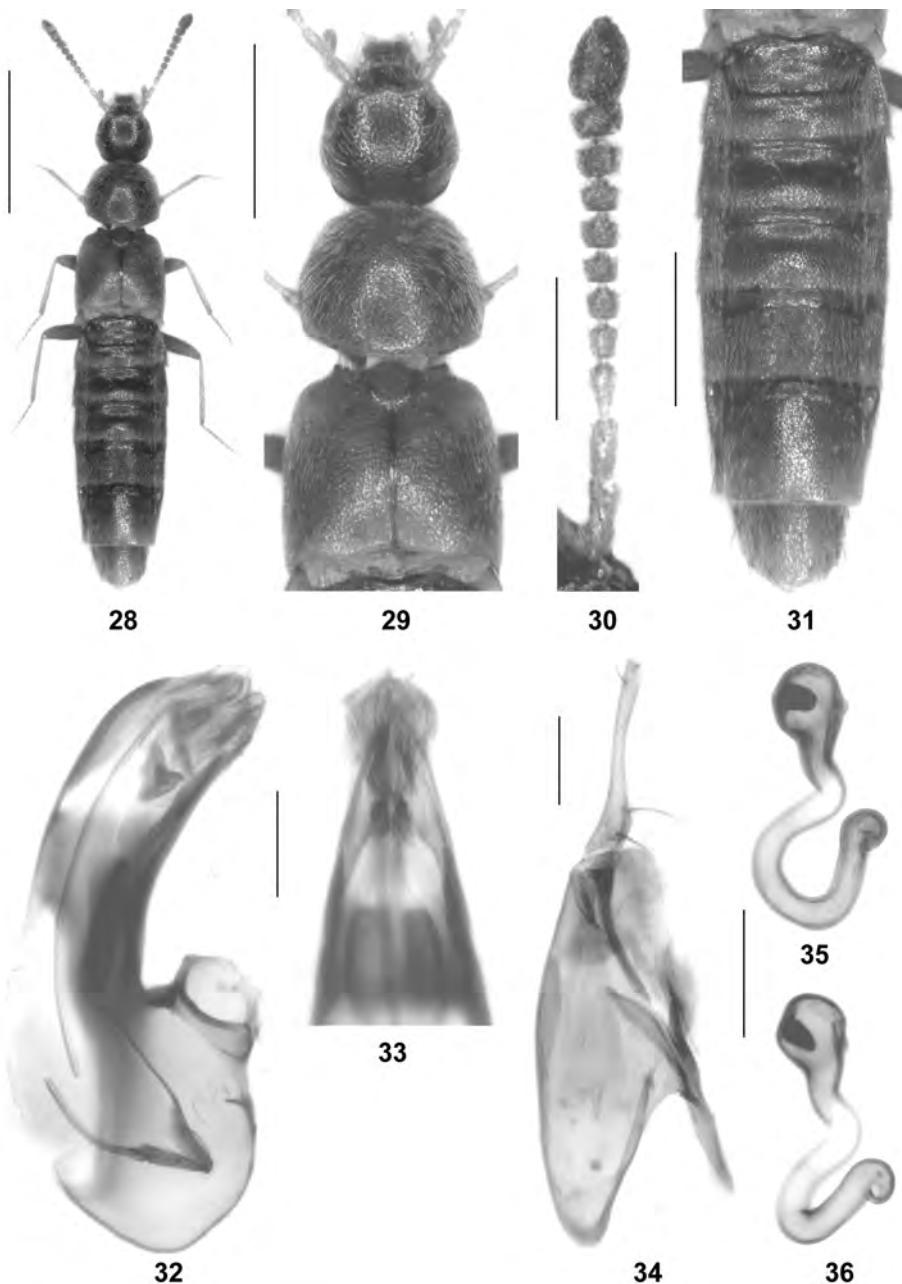
Abdomen (Fig. 40) slightly narrower than elytra; tergites III-V with very shallow anterior impressions; punctuation rather coarse and very dense, nearly as dense on tergite VII as on anterior tergites; pubescence pale and long; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII broadly concave in the middle (Fig. 51); sternite VIII (Fig. 52) significantly longer than tergite VIII, posterior margin strongly convex; median lobe of aedeagus (Figs 41-42) nearly 0.5 mm long; ventral process strongly arched in lateral view, apically conspicuously bifid; crista apicalis prominent; internal sac with moderately long and straight flagellum; paramere (Figs 43-44) approximately 0.9 mm long, apical lobe moderately slender, basally dilated, and moderately long, distinctly less than half as long as basal portion of paramere.

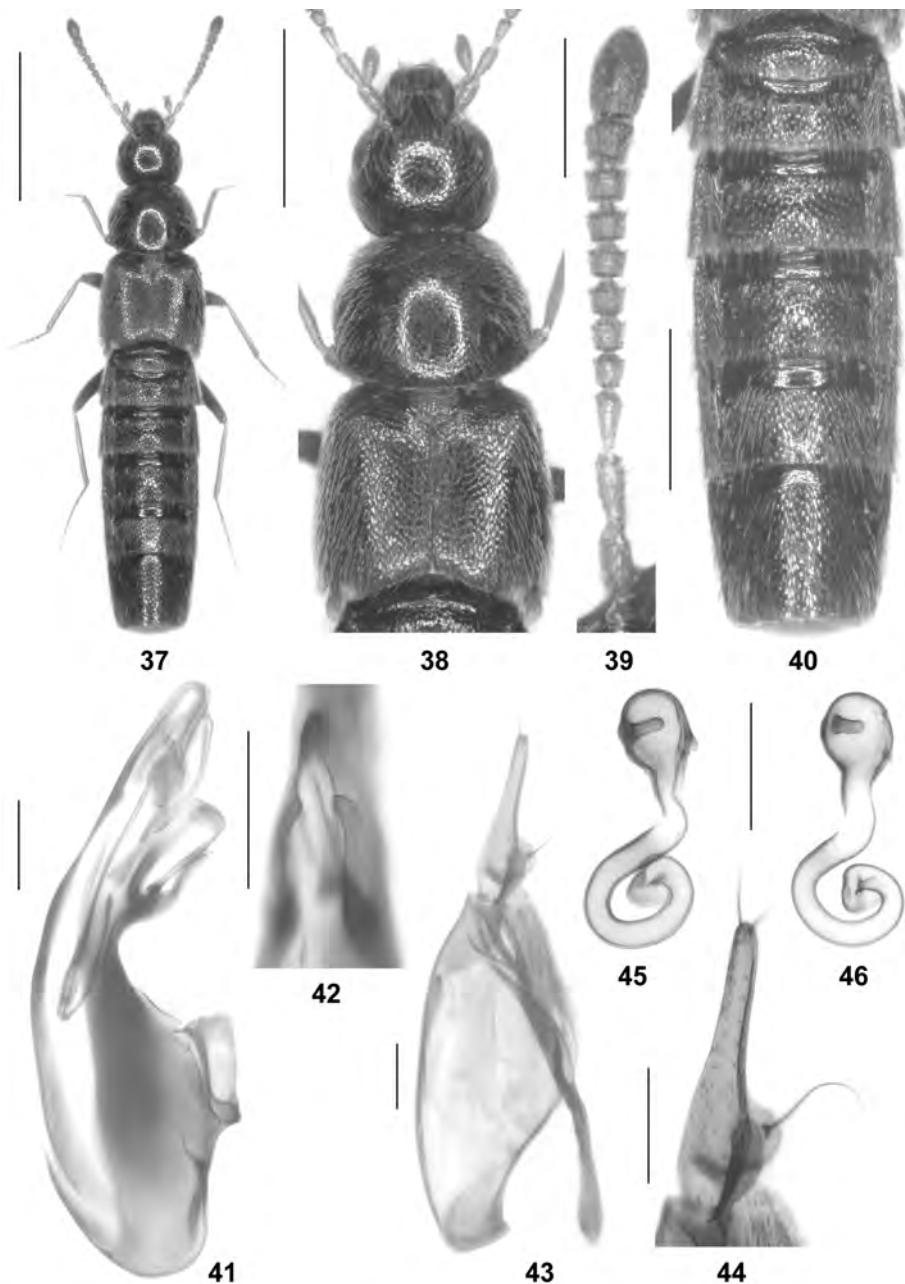
♀: posterior margin of tergite VIII shallowly concave in the middle (Fig. 53); posterior margin of sternite VIII weakly convex, with a moderately dense fringe of moderately modified setae (Fig. 54); spermatheca as in Figs 45-46.

**C o m p a r a t i v e n o t e s :** This species is characterized particularly by the shapes of the male and female tergites and sternites VIII, the moderately modified chaetotaxy of the female sternite VIII, and the conspicuous morphology of the aedeagus. The spermatheca somewhat resembles that of *T. sichuanensis* PACE, 1999 (male unknown) from Gongga Shan, from which *T. bifida* is distinguished by darker coloration, a broader and more transverse pronotum, finer punctuation of the forebody, and the presence of microsculpture on the head and the pronotum. For illustrations of the habitus and the spermatheca of *T. sichuanensis* see PACE (1999).

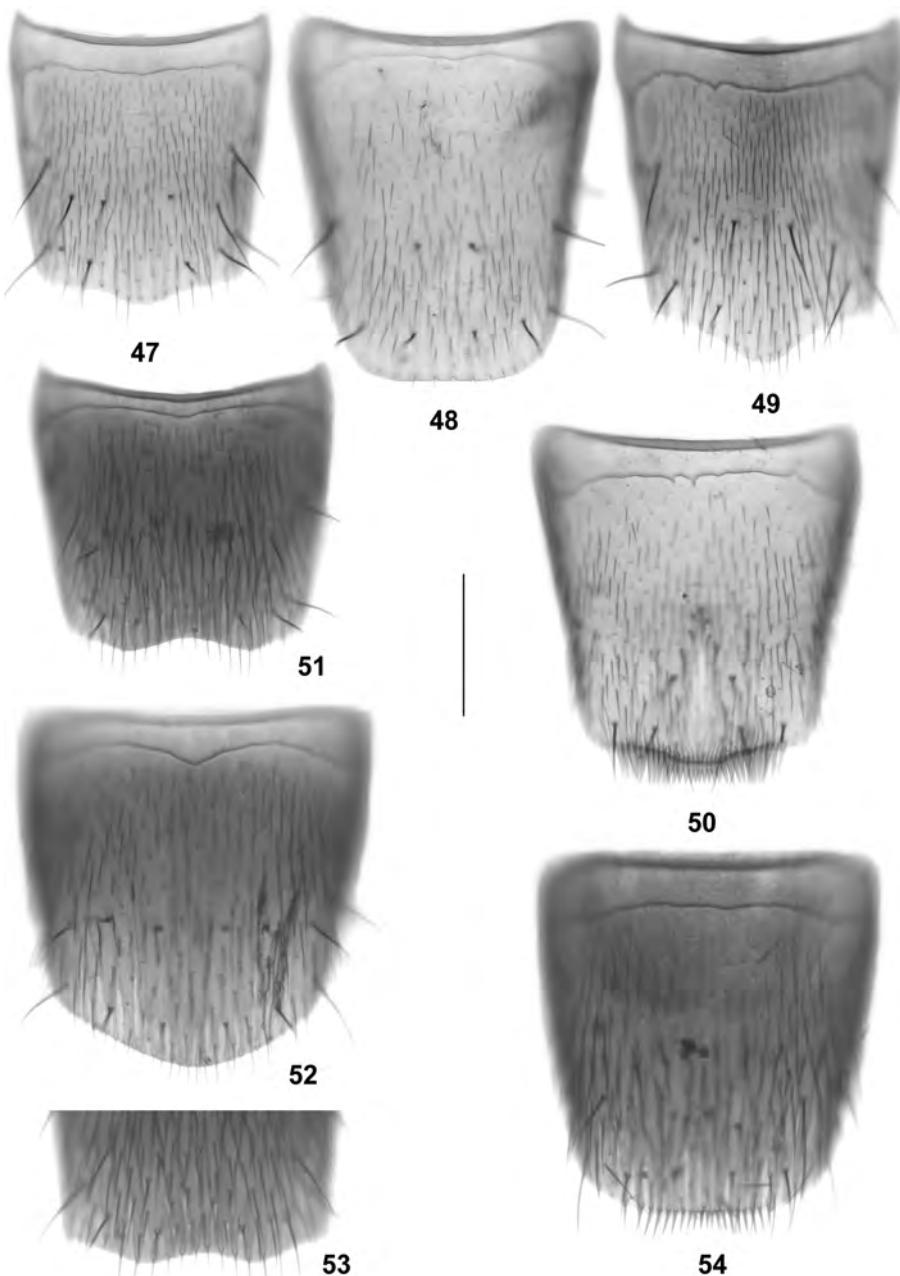
**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** *Trichoglossina bifida* is currently known from two localities in Northeast Yunnan. The specimens were sifted from litter, moss, and roots of herbs in a secondary pine forest in Sedan Snow Mountain Scenic Resort to the west of Dongchuan (Fig. 55) and in a mixed forest with alder, pine, and shrub undergrowth in a mountain to the west of Xundian at altitudes of 2300-2620 m.



**Figs 28-36:** *Trichoglossina acutissima*: habitus (28); forebody (29); antenna (30); abdomen (31); median lobe of aedeagus in lateral view (32); apical portion of median lobe in ventral view (33); paramere (34); spermatheca (35-36). Scale bars: 28: 1.0 mm; 29, 31: 0.5 mm; 30: 0.2 mm; 32-36: 0.1 mm.



Figs 37-46: *Trichoglossina bifida*: habitus (37); forebody (38); antenna (39); abdomen (40); median lobe of aedeagus in lateral view (41); apical portion of median lobe in ventral view (42); paramere (43); apical lobe of paramere (44); spermatheca (45-46). Scale bars: 37: 1.0 mm; 38, 40: 0.5 mm; 39: 0.2 mm; 41-46: 0.1 mm.



Figs 47-54: *Trichoglossina acutissima* (47-50) and *T. bifida* (51-54): male tergite VIII (47, 51); male sternite VIII (48, 52); female tergite VIII (49); female sternite VIII (50, 54); posterior portion of female tergite VIII (53). Scale bar: 0.2 mm.



**Fig. 55:** Type locality of *Trichoglossina bifida*.

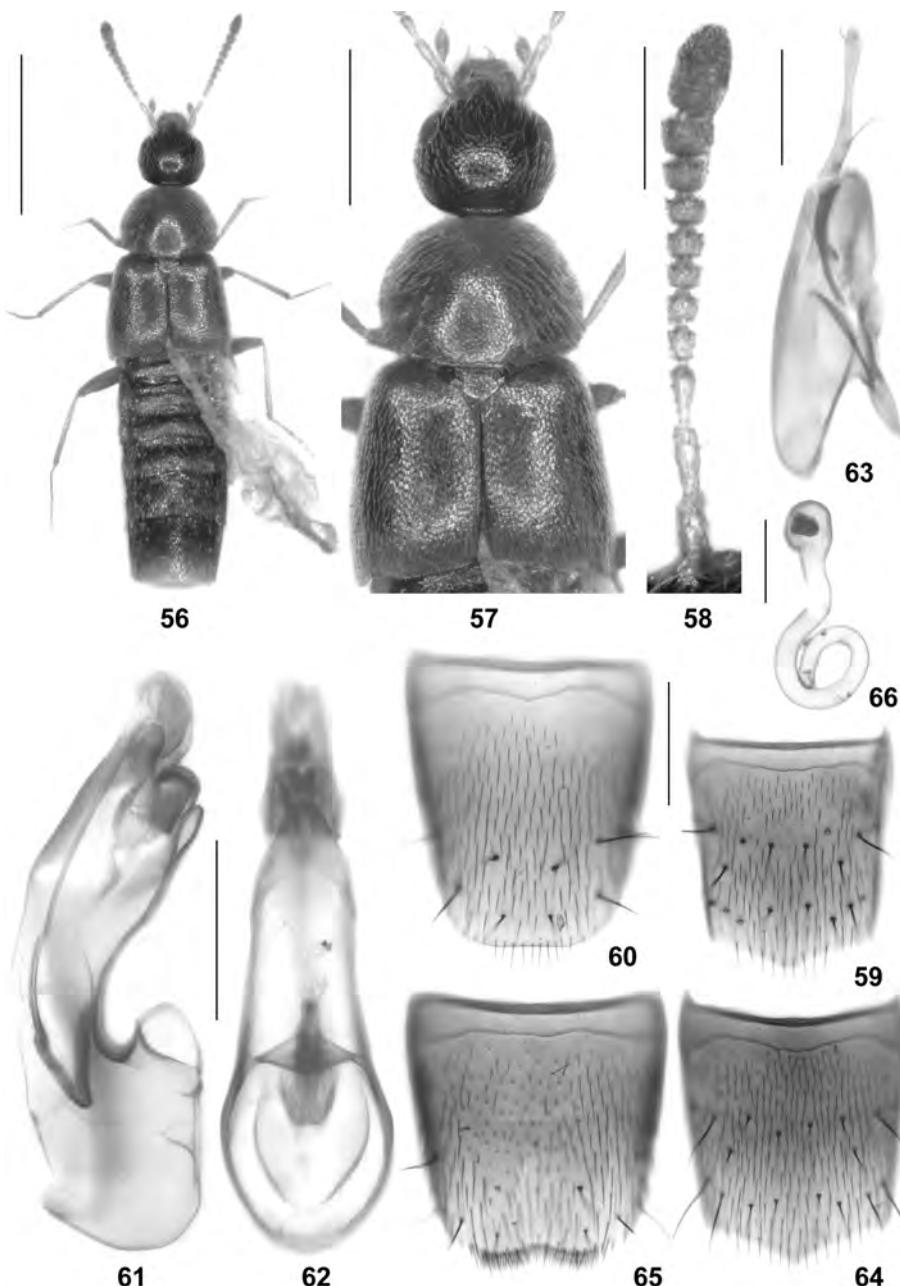
***Trichoglossina volans* nov.sp. (Figs 56-66, Map 1)**

Type material: Holotype ♂: "CHINA (N. Sichuan) 70 km N Songpan, road S 301, above Gan lake, 2700 m, 33°15'26"N, 103°46'03"E, (spruce forest with birch, litter, moss, soil sifted, 12.VIII.2012 D.W. Wrase [26] / Holotypus ♂ *Trichoglossina volans* sp. n., det. V. Assing 2018" (MNB). Paratype ♀: same data as holotype (cAss).

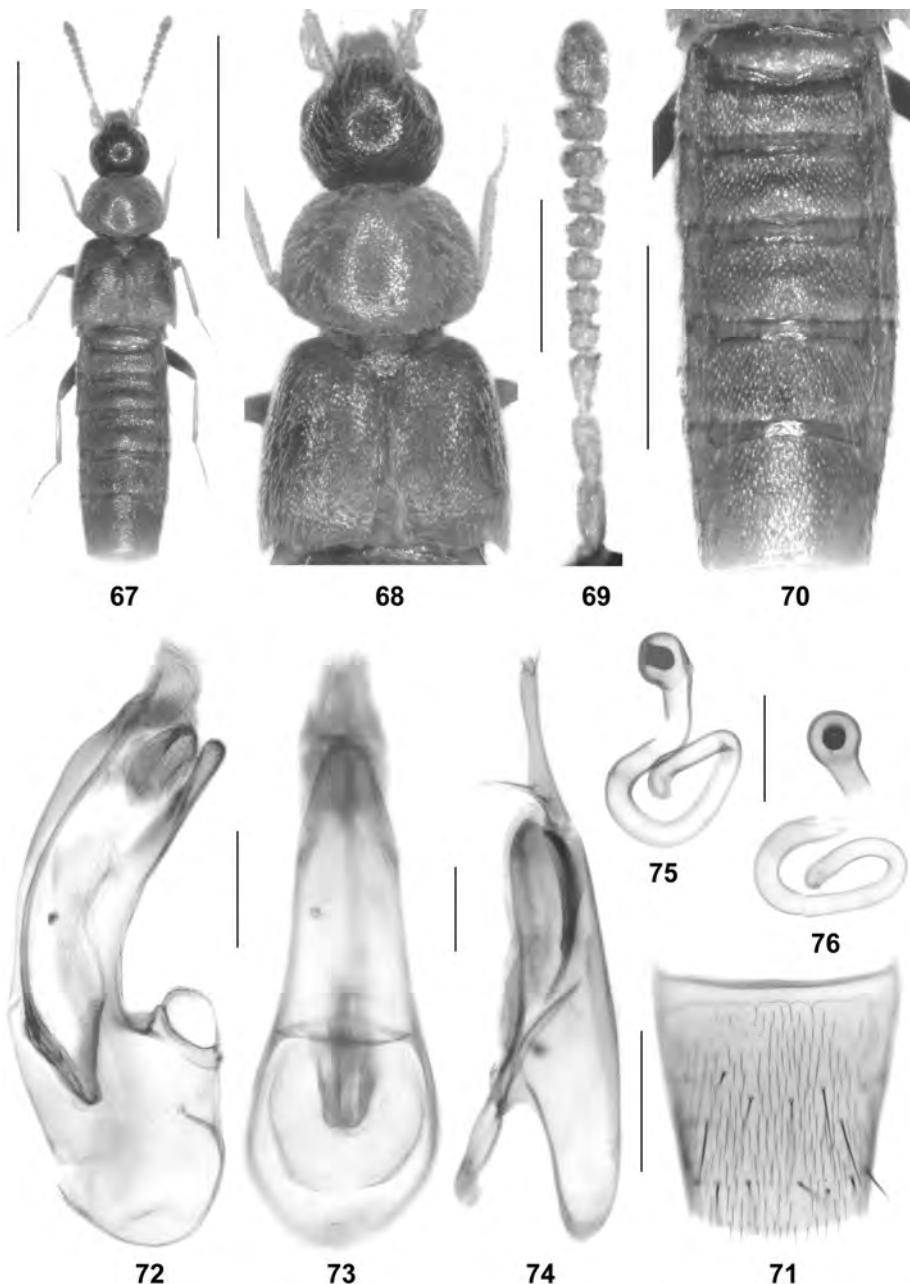
Etymology: The specific epithet is the present participle of the Latin verb volare (to fly) and alludes to the fully developed hind wings.

Description: Body length 3.0-3.2 mm; length of forebody 1.4-1.5 mm. Habitus as in Fig. 56. Coloration: head dark-brown to blackish; pronotum reddish-yellow to pale-reddish; elytra brown with the humeral angles reddish and the posterior margin broadly yellowish; abdomen blackish-brown to blackish with the narrow posterior margins of segments III-VI, the posterior portion of segment VII, and all of segments VIII-X reddish-yellow to yellow; legs yellow; antennae yellowish with the apical portion more or less distinctly and more or less extensively darker; maxillary palpi yellowish.

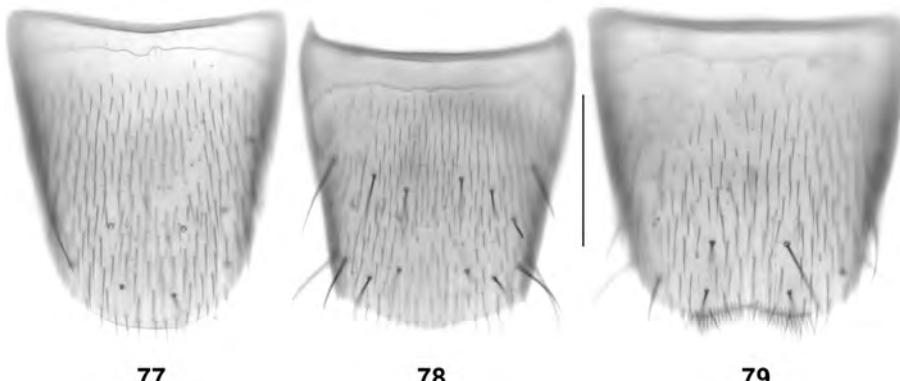
Head (Fig. 57) weakly transverse; punctuation dense and fine; interstices with shallow, but distinct microreticulation. Eyes weakly convex, approximately as long as postocular region in dorsal view. Antenna (Fig. 58) approximately 0.8 mm long; antennomere IV as long as broad or weakly oblong; antennomeres V-X transverse and gradually increasing in width, VI-X more than 1.5 times as broad as long, X slightly longer than IX, and XI as long as the combined length of antennomeres VIII-X (♂), or nearly so (♀).



Figs 56-66: *Trichoglossina volans*: habitus (56); forebody (57); antenna (58); male tergite VIII (59); male sternite VIII (60); median lobe of aedeagus in lateral and in ventral view (61-62); paramere (63); female tergite VIII (64); female sternite VIII (65); spermatheca (66). Scale bars: 56: 1.0 mm; 57: 0.5 mm; 58-65: 0.2 mm; 66: 0.1 mm.



Figs 67-76: *Trichoglossina discolor*: habitus (67); forebody (68); antenna (69); abdomen (70); male tergite VIII (71); median lobe of aedeagus in lateral and in ventral view (72-73); paramere (74); spermatheca (75-76). Scale bars: 67: 1.0 mm; 68, 70: 0.5 mm; 69, 71: 0.2 mm; 72-76: 0.1 mm.



77

78

79

**Figs 77-79:** *Trichoglossina discolor*: male sternite VIII (77); female tergite VIII (78); female sternite VIII (79). Scale bar: 0.2 mm.

Pronotum (Fig. 57) strongly transverse and broad in relation to head, nearly 1.3 times as broad as long and approximately 1.4 times as broad as head, broadest approximately in the middle, moderately convex in cross-section; punctuation and microsculpture similar to those of head.

Elytra (Fig. 57) slightly longer than pronotum; punctuation dense and fine; interstices with shallow microsculpture. Hind wings fully developed. Tarsi very long and slender; metatarsus approximately as long as, or even longer than metatibia; metatarsomere I approximately as long as, or even longer than the combined length of II-IV.

Abdomen narrower than elytra; tergites III-V with shallow anterior impressions; punctuation moderately coarse and very dense, as dense on tergite VII as on anterior tergites; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII obtusely pointed in the middle (Fig. 59); sternite VIII (Fig. 60) somewhat longer than tergite VIII, posterior margin truncate; median lobe of aedeagus (Figs 61-62) 0.5 mm long; ventral process somewhat sinuate in lateral view, apically acute in ventral view; crista apicalis prominent; internal sac with long flagellum; paramere (Fig. 63) approximately 0.8 mm long, apical lobe very slender, medially constricted, and long, approximately half as long as basal portion of paramere.

♀: posterior margin of tergite VIII slightly more sharply pointed than in male (Fig. 64); posterior margin of sternite VIII weakly concave, with a very dense fringe of distinctly modified stout setae (Fig. 65); spermatheca as in Fig. 66.

**C o m p a r a t i v e n o t e s :** This species is characterized by a broad habitus with a large and distinctly transverse pronotum, by the shapes of the male and female tergites and sternites VIII, and the conspicuous morphology of the aedeagus. The shape of the median lobe of the aedeagus somewhat resembles that of *T. parasmelanai* PACE, 1999 (Gansu: Xinlong Shan), but differs by a more prominent crista apicalis and the shape of the ventral process (lateral view). Externally, *T. volans* is distinguished from *T. parasmelanai* by a darker head (*T. parasmelanai*: head yellowish-brown), a much larger and more transverse pronotum, and the presence of distinct microsculpture on the head and pronotum (*T. parasmelanai*: head without, pronotum with very shallow microsculpture). For illustrations of the habitus and the aedeagus of *T. parasmelanai* see PACE

(1999). From the syntopic *T. acutissima*, *T. volans* is differs by a much broader habitus, a larger, distinctly more transverse, and less convex (cross-section) pronotum, darker coloration of the pronotum, legs, and antennae, fully developed hind wings, longer and broad elytra, much more distinct punctuation on the abdomen, and by the primary and secondary sexual characters.

**Distribution and natural history:** The type locality and the circumstances of collection are identical to those of *T. acutissima*.

***Trichoglossina discolor* nov.sp. (Figs 67-79, Map 1)**

**Type material:** Holotype ♂: "CHINA [2] - S-Shaanxi, SW Meixian, Qinling Shan, 34°01'31"N, 107°24'13"E, 1870 m, 26.VII.2012, V. Assing / Holotypus ♂ *Trichoglossina discolor* sp.n., det. V. Assing 2018" (cAss). Paratypes: 2♀♀: same data as holotype (cAss).

**Ecology:** The specific epithet (Latin, adjective: colourful) alludes to the distinctive coloration.

**Description:** Body length 2.3-3.0 mm; length of forebody 1.2-1.3 mm. Habitus as in Fig. 67. Coloration: head blackish-brown; pronotum pale reddish; elytra dark-yellowish with the antero-lateral portions extensively, but slightly and diffusely darker; abdomen reddish with yellowish apex; legs yellowish with darker meso- and metafemora; antennae with the basal half yellowish and the apical half reddish; maxillary palpi yellowish.

Head (Fig. 68) weakly transverse; punctuation dense and fine; interstices with distinct microreticulation. Eyes weakly convex, approximately as long as postocular region in dorsal view, or slightly shorter. Antenna (Fig. 69) approximately 0.7 mm long; antennomere IV as long as broad or weakly transverse; antennomeres V-X transverse and gradually increasing in width, VI-X more than 1.5 times as broad as long, X slightly longer than IX, and XI longer than the combined length of antennomeres IX and X.

Pronotum (Fig. 68) 1.20-1.25 times as broad as long and 1.30-1.35 times as broad as head, broadest approximately in the middle, moderately convex in cross-section; punctuation very dense and fine, but more distinct than that of head; interstices with shallow microsculpture visible only at higher magnification.

Elytra (Fig. 68) approximately as long as pronotum; punctuation dense, fine, and ill-defined; interstices with shallow microsculpture. Hind wings fully developed. Legs moderately long and moderately slender; metatarsus nearly as long as metatibia; metatarsomere I approximately as long as the combined length of II-IV or nearly so.

Abdomen (Fig. 70) narrower than elytra; tergites III-V with shallow anterior impressions; punctuation extremely dense, composed of oblong granules, nearly as dense on tergite VII as on anterior tergites; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII weakly convex (Fig. 71); sternite VIII (Fig. 77) somewhat longer than tergite VIII, posterior margin convex; median lobe of aedeagus (Figs 72-73) 0.45 mm long; ventral process nearly straight in apical two-thirds in lateral view, apically convex in ventral view; crista apicalis prominent; internal sac with long flagellum; paramere (Fig. 74) nearly 0.7 mm long, apical lobe slender and long, but less than half as long as basal portion of paramere.

♀: posterior margin of tergite VIII indistinctly obtusely pointed in the middle (Fig. 78); posterior margin of sternite VIII weakly concave, with a very dense fringe of distinctly modified stout setae (Fig. 79); spermatheca as in Figs 75-76.

**C o m p a r a t i v e n o t e s :** This species is characterized by its coloration, relatively small size, the shapes of the male and female tergites and sternites VIII, and the morphology of the aedeagus. It is additionally distinguished from the three species previously recorded from Shaanxi as follows:

from *T. emeimontis* PACE, 2012 by the presence of microsculpture on the forebody (absent in *T. emeimontis*), larger eyes, and a spermatheca with a much longer proximal portion;

from the much darker *T. nona* PACE, 2012 by the presence of microsculpture on the head and pronotum, larger eyes, and a spermatheca with a much longer proximal portion;

from *T. taibaiensis* PACE, 2012 by the presence of microsculpture on the forebody and the differently shaped spermatheca. For illustrations of *T. emeimontis*, *T. nona*, and *T. taibaiensis* see PACE (2012).



**Fig. 80:** Type locality of *Trichoglossina discolor*.

**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** The type locality is situated in the Qinling Shan, South Shaanxi (Map 1). The specimens were sifted from litter and grass near a stream in a secondary deciduous forest at an altitude of 1870 m.

#### ***Trichoglossina* sp.**

**M a t e r i a l e x a m i n e d :** China: 1♀, N-Sichuan, N Songpan, road S 301, above Gan lake, 33°15'N, 103°46'E, 2700 m, spruce forest with birch, litter, mushrooms, moss, and dead wood sifted, 12.VIII.2012, leg. Assing (cAss).

**C o m m e n t :** Based on external characters, the above female probably represents an undescribed species. A male would be required for an adequate description. The specimen was collected in the type locality of *T. acutissima* and *T. volans*.

### Acknowledgement

Michael Schülke (Berlin) contributed material from his collection, now in MNB.

### Zusammenfassung

Sechs Arten der Gattung *Trichoglossina* PACE, 1987 aus China werden beschrieben und abgebildet: *T. aptera* nov.sp. (Nord-Sichuan), *T. alticola* nov.sp. (Nord-Sichuan), *T. acutissima* nov.sp. (Nord-Sichuan), *T. volans* nov.sp. (Nord-Sichuan), *T. discolor* nov.sp. (Nord-Sichuan) und *T. bifida* nov.sp. (Nordost-Yunnan). Die Gattung, die bislang ausschließlich aus Nepal und China nachgewiesen ist, enthält damit derzeit 39 Arten.

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